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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,307	03/26/2004	Alexander James Ciniglio	1365.083US1	8278
21186	7590	05/03/2005	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402-0938			EDMONDSON, LYNNE RENEE	
		ART UNIT	PAPER NUMBER	
		1725		

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/811,307	CINIGLIO, ALEXANDER JAMES	
	<b>Examiner</b>	<b>Art Unit</b>	
	Lynne Edmondson	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 26 March 2004.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-30 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 3/26/04 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
     1. Certified copies of the priority documents have been received.  
     2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because the drawings are not clear. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1725

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by

Kobayashi et al. (USPN 5542600).

Kobayashi teaches a method and apparatus for soldering and visually assessing solder joints wherein a video camera (col 15 lines 45-50) is used in combination with adjacent conveyors (4, 5, 11, 31), a carriage (12) and control means (CPU) to assess the need for corrective soldering (col 9 line 55 – col 10 line 61). The board is then resoldered as necessary (col 14 lines 1-62 and col 22 line 41 – col 23 line 18, figure 6 and 14). As the soldering apparatus is an iron, individual joints can be corrected (col 22 lines 46-54). As shown in figures 2 and 14, multiple boards can be processed simultaneously.

4. Claims 1, 3, 5-12, 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Shin et al. (USPN 6295728 B1)

Shin teaches a method and apparatus for soldering and visually assessing solder joints wherein a camera is used in combination with adjacent conveyors, a carriage and control means (col 3 lines 50-63) to assess the need for corrective soldering (figure 2,

col 5 lines 51-64, col 6 line 51 – col 7 line 47 and col 8 lines 26-36). The board is then resoldered as necessary (col 14 lines 1-62 and col 22 line 41 – col 23 line 18, figure 6 and 14). The conveyors operate in forward and reverse (col 21 lines 16-34).

5. Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Vilella (US 2004/0208354 A1).

Vilella teaches a method and apparatus for soldering and visually assessing solder joints wherein a camera is used in combination with adjacent conveyors, a carriage and control means to assess the need for corrective soldering (paragraphs 26-30 and 39-43). The board is then resoldered as necessary (paragraph 54). As the soldering apparatus is an iron, individual joints can be corrected (col 22 lines 46-54). Figures 1 and 2.

6. Claims 1-5 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Shimizu et al. (USPN 6634290 B1).

Shimizu teaches a method for soldering and visually assessing solder joints wherein an optical device is used in combination with control means to assess the need for corrective soldering. The board is then resoldered as necessary until a limit is reached and the process is stopped (figure 11, col 1 line 66 – col 2 line 56 and col 3 lines 1-7).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 16-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin et al. (USPN 6295728 B1) in view of Graves et al. (US 2002/0079353 A1).

Shin teaches a method and apparatus for soldering and visually assessing solder joints wherein a camera is used in combination with adjacent conveyors, a carriage and control means (col 3 lines 50-63) to assess the need for corrective soldering (figure 2, col 5 lines 51-64, col 6 line 51 – col 7 line 47 and col 8 lines 26-36). The board is then resoldered as necessary (col 14 lines 1-62 and col 22 line 41 – col 23 line 18, figure 6 and 14). The conveyors operate in forward and reverse (col 21 lines 16-34). However, the soldering process is not disclosed.

Graves teaches wave or dip soldering wherein the board is pre-heated and inspected (paragraph 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention that wave or dip soldering is conventional and an obvious variation of reflow soldering. In both types of soldering, there is a need to quickly assess and correct faulty joints and thereby simultaneously produce various kinds of circuit boards in a reliable, time and cost-effective manner (Shin, col 1 lines 25-41).

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Spigarelli et al. (USPN 4832250), Holm (US 2002/0014602 A1), Levi et al. (US 2004/0120570 A1) and Kobayashi et al. (USPN 6362877).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson  
Primary Examiner  
Art Unit 1725

LRE

LYNNE R. EDMONDSON  
PRIMARY EXAMINER

4/17/06